CELL CALCIUM

Volume Contents

Number 1 January 1990

The role of calcium in insulin release from the human fetal pancreas 1
B.E. Tuch, K.J. Osgerby and J.R. Turtle

Calcium efflux across the plasma membrane of rat parotid acinar cells is unaffected by receptor activation or by the microsomal calcium ATPase inhibitor, thapsigargin 11
H. Takemura, O. Thastrup and J.W. Putney Jr

Ca^{2+}-binding site of carp parvalbumin recognized by monoclonal antibody 19
R. Tinner, M. Oertle, C.W. Heizmann and H.R. Bosshard

Effect of Quin-2 on $^{45}Ca^{2+}$ uptake mediated by Na^+_i/Ca^{2+}_o exchange and $^{45}Ca^{2+}$ efflux in rat brain synaptosomes: a requirement for $[Ca^{2+}]_i$ 25
P. Blanco, A. Martínez-Serrano, E. Bogónez and J. Satrústegui

S-100b protein regulates aggregation and fusion of cardiolipin vesicles 35
G. Zolese, G. Curatola, S. Amati, I. Giambanco and R. Donato

Ethanol protects the heart against the calcium paradox injury 47
W. Auffermann, S. Wu, W. Parmley and J. Wikman-Coffelt

Number 2/3 February/March 1990

IMAGING OF CELL CALCIUM Collected Papers and Reviews — Edited by *D. A. Williams & F. S. Fay*

Preface 55
D. A. Williams and F. S. Fay

Inhibition of Fura–2 sequestration and secretion with organic anion transport blockers 57
F. Di Virgilio, T. H. Steinberg and S. C. Silverstein

Assessment of Fura–2 for measurements of cytosolic free calcium 63
M. W. Roe, J. J. Lemasters and B. Herman

Intracellular calibration of the fluorescent calcium indicator Fura–2 75
D. A. Williams and F. S. Fay

Alteration of intracellular Fura–2 fluorescence by viscosity : A simple correction 85
M. Poenie

Practical design criteria for a dynamic ratio imaging system 93
R. Y. Tsien and A. T. Harootunian

High temporal resolution video imaging of intracellular calcium 111
T. Takamatsu and W. G. Wier

Real-time confocal miscroscopy and calcium measurements in heart muscle cells : Towards the development of a fluorescence microscope with high temporal and spatial resolution 121
E. Niggli and W. J. Lederer

Charge-coupled device imaging of rapid calcium transients in cultured arterial smooth muscle cells 131
J. J. Linderman, L. J. Harris, L. L. Slakey and D. J. Gross

Imaging $[Ca^{2+}]_i$ dynamics during signal transduction 145
T. A. Ryan, P. J. Millard and W. W. Webb

Ca^{2+} imaging in single living cells : Theoretical and practical issues 157
E. D. W. Moore, P. L. Becker, K. E. Fogarty, D. A. Williams and F. S. Fay

Local and global changes in cytosolic free calcium in neutrophils during chemotaxis and phagocytosis 181
P. W. Marks and F. R. Maxfield

Ca^{2+} channels and intracellular Ca^{2+} stores in neuronal and neuroendocrine cells 191
D. Milani, A. Malgaroli, D. Guidolin, C. Fasolato, S. D. Skaper, J. Meldolesi and T. Pozzan

Cell shape and increased free cytosolic calcium $[Ca^{2+}]_i$ induced by growth factors 201
R. W. Tucker, K. Meade-Cobun and D. Ferris

Imaging spatial distribution of release in single muscle fibres from *Balanus nubilus* using image intensification 211
M. P. Timmerman, J. F. Godber, A. Walton and C. C. Ashley

Measurement of intracellular Ca^{2+} in cultured arterial smooth muscle cells using Fura–2 and digital imaging microscopy 221
W. F. Goldman, S. Bova and M. P. Blaustein

Ca^{2+} dynamics in neuronal growth cones : Regulation and changing patterns of Ca^{2+} entry 233
J. A. Connor, S. B. Kater, C. Cohan and L. Fink

Imaging cytoplasmic free calcium in histamine stimulated endothelial cells and in fMet-Leu-Phe stimulated neutrophils 241
R. Jacob

Number 4 April 1990

Taurine modulates ion influx through cardiac Ca^{2+} channels 251
A. Sawamura, H. Sada, J, Azuma, S. Kishimoto and N. Sperelakis

Effects of cyclic nucleotide dependent protein kinases on the endoplasmic reticulum Ca^{2+} pump of bovine pulmonary artery 261
L. Raeymaekers, J.A. Eggermont, F. Wuytack and R. Casteels

The role of increased calcium influx rate in receptor mediated function of differentiating HL-60 cells 269
A. Aviram, A. Rephaeli and M. Shaklai

The effect of Ca^{2+} and calmodulin on the inhibition of Ca^{2+}+Mg^{2+}-ATPase in erythrocyte ghost membranes by nonpolar and polar carbodiimides 275
K.S. Famulski, S. Pikula, A. Wrzosek and A.B. Wojtczak

Role of calcium and cAMP in heterologous up-regulation of the 1,25-dihydroxyvitamin D_3 receptor i n an osteoblast cell line 281
J.P.T.M. van Leeuwen, J.C. Birkenhäger, J.P. Schilte, C.J. Buurman and H.A.P. Pols

Confocal imaging of ionised calcium in living plant cells 291
D.A. Williams, S.H. Cody, C.A. Gehring, R.W. Parish and P.J. Harris

Potent and cooperative feedback inhibition of adenylate cyclase activity by calcium in pituitary-derived GH_3 cells 299
C.L. Boyajian and D.M.F. Cooper

A long-lasting potentiation of calmodulin-mediated chloride channel activity without a mediation of protein kinase C in *Xenopus* oocytes injected with rat brain mRNA 309
S. Kaneko, E. Doi, H. Watanabe and Y. Nomura

Number 5 May 1990

WORKSHOP on Regulation by Extracellular Ca^{2+} — Collected by *Dr E. F. Nemeth*

Introduction : The role of extracellular calcium in the regulation of intracellular calcium and cell function 319
E. F. Nemeth and E. Carafoli

Regulation of cytosolic calcium by extracellular divalent cations in C-cells and parathyroid cells 323
E. F. Nemeth

Monoclonal antiparathyroid antibodies – tools for studies of the regulation of cytoplasmic calcium and function of parathyroid and other antibody-reactive cells 329
E. Gylfe, C. Juhlin, G. Åkerström, L. Klareskog, L. Rask and J Rastad

Ca^{2+}-sensing, second messengers, and the control of parathyroid hormone secretion 333
E. M. Brown, C. J. Chen, O. Kifor, M. S. Leboff, G. El-Hajj, V. Fajtova and L. T. Rubin

Control of renin secretion by extracellular calcium 339
J. C. S. Fray

End of Workshop

Effects of thyroid hormone on Ca^{2+} efflux and Ca^{2+} transport capacity in rat skeletal muscle 343
M. E. Everts

Modulation of free Ca oscillations in single hepatocytes by changes in extracellular K^+, Na^+ and Ca^{2+} 353
N. M. Woods, C. J. Dixon, K. S. R. Cuthbertson and P. H. Cobbold

Ca^{2+} binding by *Myxicola* neurofilament proteins 361
R. F. Abercrombie, N. F. Al-Baldawi and J. Jackson

Measurement of intracellular Ca^{2+} in BC3H-1 muscle cells with Fura–2: Relationship to acetylcholine receptor synthesis 371
J. R. Berlin, M. A. Wozniak, M. B. Cannell, R. J. Bloch and W. J. Lederer

Number 6 June/July 1990

Spontaneous and experimentally evoked $[Ca^{2+}]_i$-transients in cardiac myocytes measured by means of a fast Fura–2 technique 385
S. Bals, M. Bechem, W. Paffhausen and L. Pott

The effects of Mg^{2+} on rat liver microsomal Ca^{2+} sequestration 397
G.H. Zhang and N. Kraus-Friedmann

Endotoxicosis modulates cytosolic free calcium and basal and ACTH-stimulated lipolysis in rat adipocytes 405
J.A. Spitzer and I.V. Deaciuc

Glucose induces temperature-dependent oscillations of cytoplasmic Ca^{2+} in single pancreatic β-cells related to their electrical activity 413
B. Hellman, E. Gylfe, E. Grapengiesser, U. Panten, C. Schwanstecher and C. Heipel

Cholera toxin and its B subunit do not change cytosolic free calcium concentration 419
E.I. Astashkin, A.M. Surin, M.G. Mikhna, I.S. Nikolaeva, A.V. Lazarev and A.S. Gukovskaya

Optical response of the indicator chlortetracycline to membrane potential 425
S. Tang and T. Beeler

Influence of ischemia on $[Ca^{2+}]_i$ transients following drug therapy in hearts from aortic constricted rats 431
S. Wagner, S.T. Wu, W.W. Parmley and J. Wikman-Coffelt

Number 7 August 1990

Cytosolic free calcium concentrations in avian growth plate chondrocytes 445
T.E. Gunter, M.J. Zuscik, J.E. Puzas, K.K. Gunter and R.N. Rosier

Properties of calcium binding by *Myxicola* axoplasmic protein 459
N.F. Al-Baldawi and R.F. Abercrombie

Sphingosine increases inositol trisphosphate in rat parotid acinar cells by a mechanism that is independent of protein kinase C but dependent on extracellular calcium 469
H. Sugiya and S. Furuyama

Cyclic GMP regulates free cytosolic calcium in the pancreatic acinar cell 477
S. J. Pandol and M. S. Schoeffield-Payne

Intracellular Ca^{2+} measurement with Indo–1 in substrate-attached cells: Advantages and special considerations 487
M. Wahl, M.J. Lucherini and E. Gruenstein

Number 8 September 1990

Regulation by diacylglycerol of calcium-evoked amylase secretion from intact and permeabilized pancreatic acinar cells 501
T. Komabayashi, J. S. Mckinney and R. P. Rubin

Calcium currents in normal and dystrophic human skeletal muscle cells in culture 507
M. Rivet, C. Cognard, Y. Rideau, G. Duport and G. Raymond

Transient increases of intracellular Ca^{2+} induced by volatile anesthetics in rat hepatocytes 515
P. A. Iaizzo, R. A. Olsen, M. J. Seewald, G. Powis, A. Stier And R. A. Van Dyke

Regulation of the intracellular calcium concentration in MMQ pituitary cells by dopamine and protein kinase C 525
I. S. Login, S. -I. Kuan, A. M. Judd and R. M. MacLeod

Intracellular calcium related to force development in twitch contraction of mammalian myocardium 531
J. K. Gwathmey and R. J. Hajjar

Lipoxygenase inhibitors suppress intracellular calcium rise induced by ionomycin in rat thymocytes 539
A. S. Gukovskaya, H. Arias Pulido, V. V. Petrunyaka, V. P. Zinchenko and V. V. Bezuglov

High affinity insulin binding and insulin receptor-effector coupling: Modulation by Ca^{2+} 547
P. F. Williams, I. D. Caterson, G. J. Cooney, R. R. Zilkens and J. R. Turtle

Number 9 October 1990

Depolarization promotes caffeine induced [^{3}H]-noradrenaline release in calcium-free solution from peripheral sympathetic nerves 557
P.T. Tóth, T.L. Török and K. Magyar

Aldosterone influences free intracellular calcium in human mononuclear leukocytes in vitro 565
M. Wehling, J. Käsmayr and K. Theisen

Na^+-Dependent Ca^{2+} influx in bovine adrenal chromaffin cells 573
P-S. Liu and L-S. Kao

Phenytoin preferentially inhibits L-type calcium currents in whole-cell patch-clamped cardiac and skeletal muscle cells 581
M. Rivet, P. Bois, C. Cognard and G. Raymond

Quantitative intracellular calcium imaging with laser-scanning confocal microscopy 589
D.A. Williams

Number 10 November/December 1990

Capacitative calcium entry revisited 611
Review Article
J.W. Putney Jr

Calcium sequestration in the liver
Review Article 625
N. Kraus-Friedmann

Ca^{2+} entry in T cells is activated by emptying the inositol 1,4,5-trisphosphate sensitive Ca^{2+} pool 641
S.C. Chow and M. Jondal

Characterization of the effect of the adenosine agonist cyclohexyladenosine on platelet activating factor-induced increases in $[Ca^{2+}]_i$ in human platelets in vitro 647
M.A. Javors, M. Liu, B.S. Cuvelier and C.L. Bowden

Oxidase activation in individual neutrophils is dependent on the onset and magnitude of the Ca^{2+} signal 655
M.B. Hallett, E.V. Davies and A.K. Campbell

Messenger role of calcium in ciliary electromotor coupling: A reassessment 665
Y. Mogami, J. Pernberg and H. Machemer

Subject Index to Volume 11 675

Author Index to Volume 11 679